

Software Requirement and Design Specifications

Social Butterfly

Version: 0.1

<i>Course Code</i>	<i>CS-309</i>
<i>Instructor</i>	<i>Ms. Javeria Farooq</i>
<i>Project Team</i>	<i>Nabeel Farooqui k16-3627 Hira Kamal k16-3640 Syed Afroz Pasha k16-3643 MahamShoaib k16-3973</i>
<i>Submission Date</i>	<i>10thDecember 2018</i>

Table of Contents

1. Introduction	4
1.1. Purpose of Document.....	4
1.2. Intended Audience	4
1.3. Definition of Terms, Acronyms and Abbreviations	4
1.4. Document Convention	4
2. Overall System Description	5
2.1. Project Background.....	5
2.2. Project Scope	5
2.3. Not in Scope	5
2.4. Project Objectives	5
2.5. Stakeholders.....	5
2.6. Operating Environment.....	5
2.7. System Constraints	5
2.8. Assumptions & Dependencies	5
3. External Interface Requirements	5
3.1. Hardware Interfaces	5
3.2. Software Interfaces	5
3.3. Communications Interfaces	5
4. Functional Requirements.....	7
4.1. Functional Hierarchy	7
4.2. Use Cases.....	7
4.2.1. Add Friend / Follow	8
4.2.2. Make Post	9
4.2.3. Edit Profile.....	10
4.2.4. Admin Access (Panel).....	11
4.2.5. Browse Newsfeed	12
5. Non-functional Requirements	13
5.1. Performance Requirements	13
5.2. Safety Requirements	13
5.3. Security Requirements	13
5.4. User Documentation	13
SDS	14
6. System Architecture.....	15
6.1. System Level Architecture.....	15
Component Diagram.....	15
Deployment Diagram.....	16
6.2. Software Architecture	16
7. Design Strategy.....	17
8. Detailed System Design	17
8.1. Database Design.....	18
8.1.1. ER Diagram.....	18
8.1.2. Data Dictionary	18
Work	18

Message	19
Contact.....	19
Users	19
Posts.....	20
Admin	20
FriendRequest	20
Education	20
9. Application Design	21
10. References.....	29
11. Appendices.....	29

1. Introduction

1.1. Purpose of Document

This document's purpose is to explain the working of our project, Social butterfly. And to make it easier for the reader to understand the underlying architecture and limitations of it as well.

1.2. Intended Audience

This document is intended for our course instructor and peers.

1.3 Definition of Terms, Acronyms and Abbreviations

Not applicable

1.4 Document Convention

This document will be using Arial font at 10 font size for paragraphs and various font sizes for headings and titles. It will also use **bold** and *italics* for emphasis where required.

2. Overall System Description

2.1. Project Background

The project aims to help the developers learn how gigantic social networking websites function. As well as how their development process goes.

2.2. Project Scope

The project aims to incorporate the main basic functionalities required for a social networking website to function. Secure account management and interacting with other users is the core part of the project.

2.3. Not in Scope

The project at this stage does not intend to compete with any existing social networking service. Additionally the project is not intended to be used commercially, therefore it has no monetization features.

2.4. Project Objectives

The project objectives include learning how social networking websites work. How they are developed and maintained.

2.5. Stakeholders

The software will be used by the general public as it is a web based social networking website.

2.6. Operating Environment

The software is web based, meaning it will work on any modern desktop web browser (tested on Chrome 71) regardless of operating system. Hardware wise is required a widescreen to work properly, i.e. smartphones and handheld devices are not supported at this time. The interface required a keyboard and mouse to interact.

2.7. System Constraints

- Modern web browser required (tested on Chrome 71)
- English language interface
- Currently works on localhost, once live it will require internet access to use

2.8. Assumptions & Dependencies

We assume that the website is being hosted on a web server with a separate database server for the sake of this report. Which will in turn make the product dependent on the server availability and the clients internet access.

3. External Interface Requirements

Not applicable

3.1. Hardware Interfaces

Not applicable

3.2. Software Interfaces

The software communicates with a MySQL server for its database requirements. It will also use a Linux based when deployed to access html files and php scripts which will be hosted on the web server.

3.3. Communications Interfaces

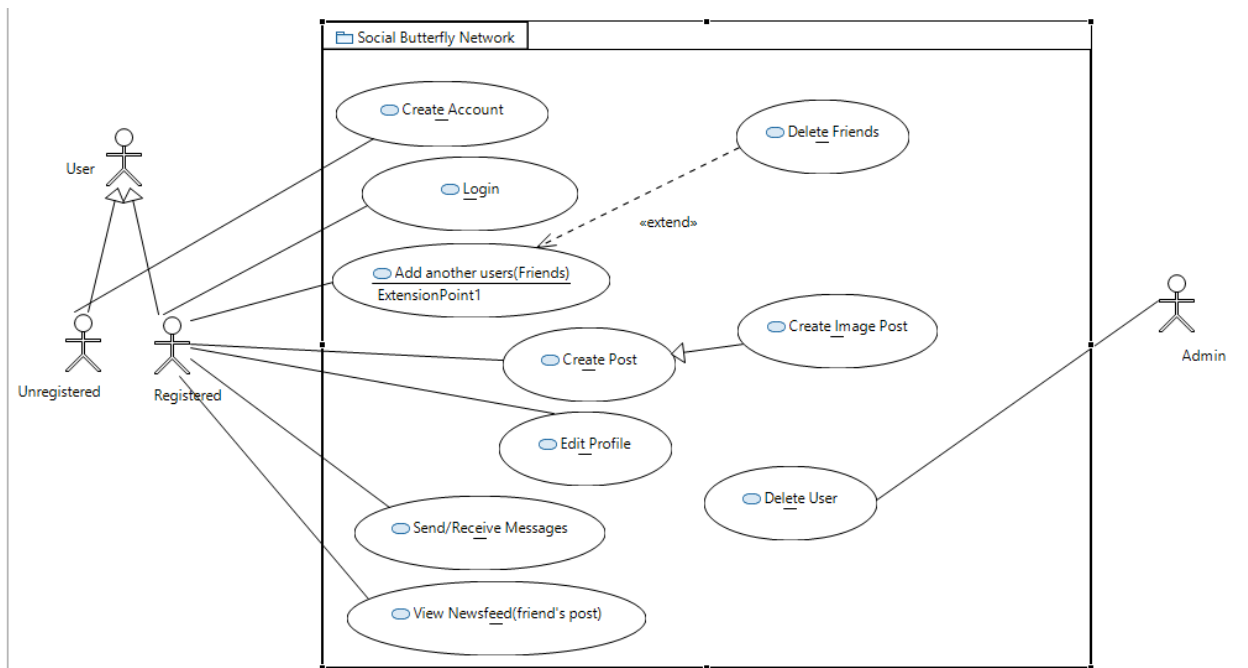
The project is web based and uses php POST and GET to communicate and pass information between various web pages. The whole project runs within a web browser. It uses HTML, PHP, CSS therefore a modern updated browser is recommended. Database is accessed using standard queries.

4. Functional Requirements

4.1. Functional Hierarchy

1. User will register (if not registered otherwise login)
2. User will edit profile
 - 2.1. Insert Profile picture
 - 2.2. Edit education info
 - 2.3. Edit work info
3. User can add other users as friends
4. User can posts images and content
5. User can see other friends posts
6. User can send messages to other users

4.2. Use Cases



4.2.1. Add Friend / Follow

Use Case Description	
Use Case name: Add Friend / Follow	
Use Case Description: The user can browse for and add another user as a friend or follow them	
Primary actor: User	Other actors: Other existing users
Stakeholders:	
Relationships: <ul style="list-style-type: none">• Includes:• Excludes:	
Pre-conditions: <ul style="list-style-type: none">• User is already logged in	
Flow of Events: <ol style="list-style-type: none">1. Actor requests list of users2. Retrieve data from database3. Display users4. Actor selects user he/she wants to add/follow5. Actor is redirected to another users timeline6. Actor clicks on <i>add friend</i>	
Alternative and exceptional flows: <ol style="list-style-type: none">2.1. Database is empty.	
Post-conditions: Database is updated	

4.2.2. Make Post

Use Case Description	
Use Case name: Make post	
Use Case Description: The user can make new post	
Primary actor: User	Other actors: none
Stakeholders:	
Relationships: <ul style="list-style-type: none">• Includes:• Excludes:	
Pre-conditions: <ul style="list-style-type: none">• User is already logged in	
Flow of Events: <ol style="list-style-type: none">1. Enter post content2. Click on post	
Alternative and exceptional flows: <ol style="list-style-type: none">1.1 Click on image button1.2 Click on browse1.3 Upload image1.4 Click on post	
Post-conditions: Database is updated	

4.2.3. Edit Profile

Use Case Description	
Use Case name: Edit Profile	
Use Case Description: The user can edit their profile	
Primary actor: User	Other actors: none
Stakeholders:	
Relationships: <ul style="list-style-type: none">• Includes:• Excludes:	
Pre-conditions: <ul style="list-style-type: none">• User is already logged in	
Flow of Events: <ol style="list-style-type: none">1. Click on Account2. Click on Edit profile3. Change values if required4. Upload new profile picture if required5. Click on save	
Alternative and exceptional flows:	
Post-conditions: Database is updated	

4.2.4. Admin Access (Panel)

Use Case Description	
Use Case name: Admin Access	
Use Case Description: Admin can delete users	
Primary actor: Admin	Other actors: Users
Stakeholders:	
Relationships: <ul style="list-style-type: none">• Includes:• Excludes:	
Pre-conditions: <ul style="list-style-type: none">• Admin is already logged in	
Flow of Events: <ol style="list-style-type: none">1. Open Search User Page2. Click on Delete User button3. Post of deleted user will also be deleted4. Friendlist of deleted user will also be deleted5. Profile of Deleted User will be deleted	
Alternative and exceptional flows:	
Post-conditions: Database is updated	

4.2.5. Browse Newsfeed

Use Case Description	
Use Case name: Browse Newsfeed	
Use Case Description: The user can browse their newsfeed and view other user's posts and also visit their timelines from here.	
Primary actor: User	Other actors: none
Stakeholders:	
Relationships: <ul style="list-style-type: none">• Includes:• Excludes:	
Pre-conditions: <ul style="list-style-type: none">• User is already logged in	
Flow of Events: <ol style="list-style-type: none">1. Click on newsfeed2. View posts	
Alternative and exceptional flows: <ol style="list-style-type: none">2.1 Click on username of another2.2 Visit their timeline	
Post-conditions: none	

5. Non-functional Requirements

5.1. Performance Requirements

The response rate of the website depends on the server it is deployed on. The project is precise and reliable as well. The hyperlinks generated point to the correct address. However the project is currently prone to SQL injection in this version.

5.2. Safety Requirements

Not applicable

5.3. Security Requirements

The information entered by the user and the posts made by the user as well as the profile picture uploaded is publically visible. Users must observe caution while using the website.

5.4. User Documentation

Not applicable

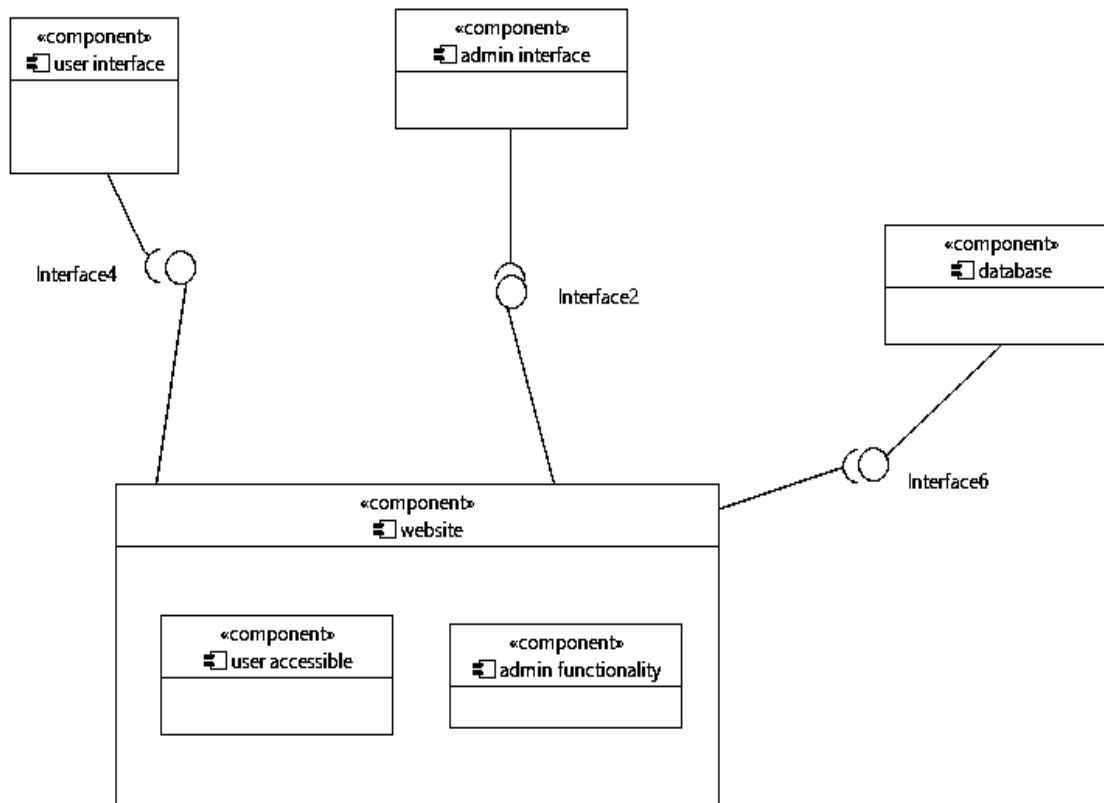
SDS

6. System Architecture

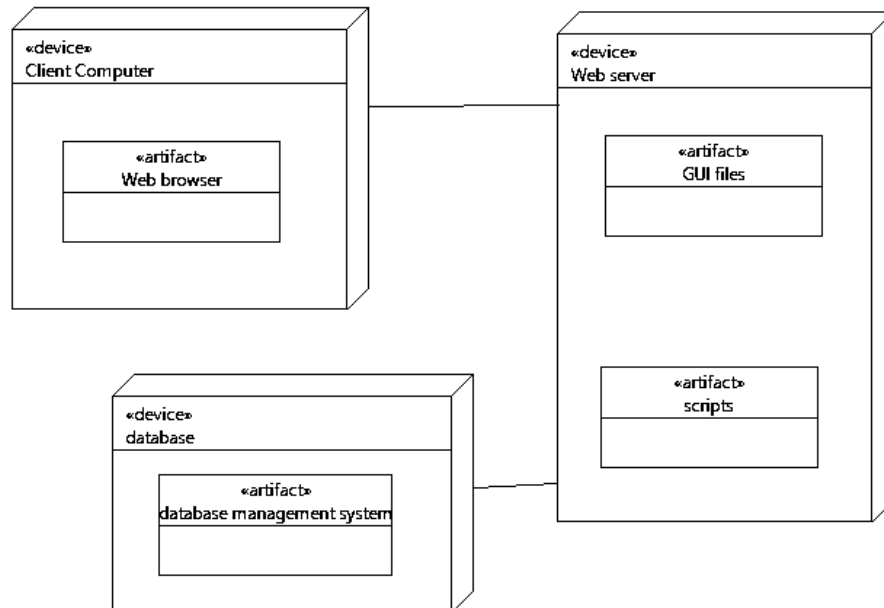
The project is a web based service, as such, it is divided into various web pages. There are php scripts that are included into various pages such as the database connection script and the header.php file. They are located in the root directory and in the scripts sub folder. The main webpages are accessible by visiting the correct url (localhost/social-butterfly/index-register.php or example) and then the others are available using the user interface such as the header or various hyperlinks throughout the website.

6.1. System Level Architecture

Component Diagram



Deployment Diagram



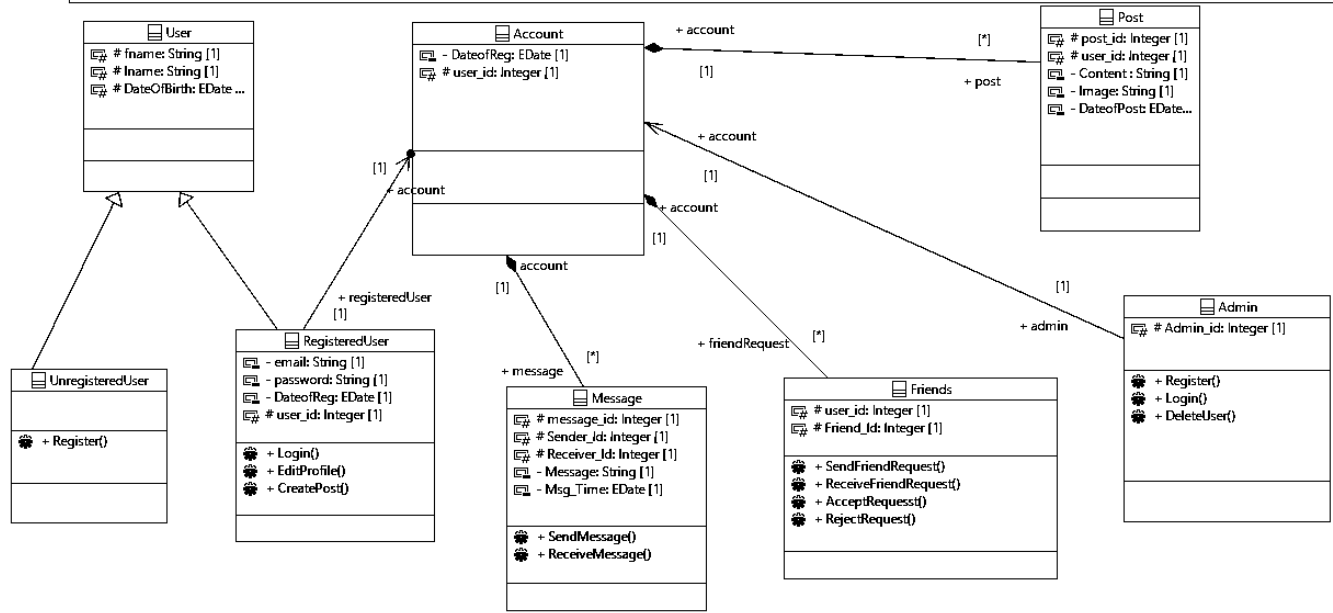
6.2. Software Architecture

Not Applicable

7. Design Strategy

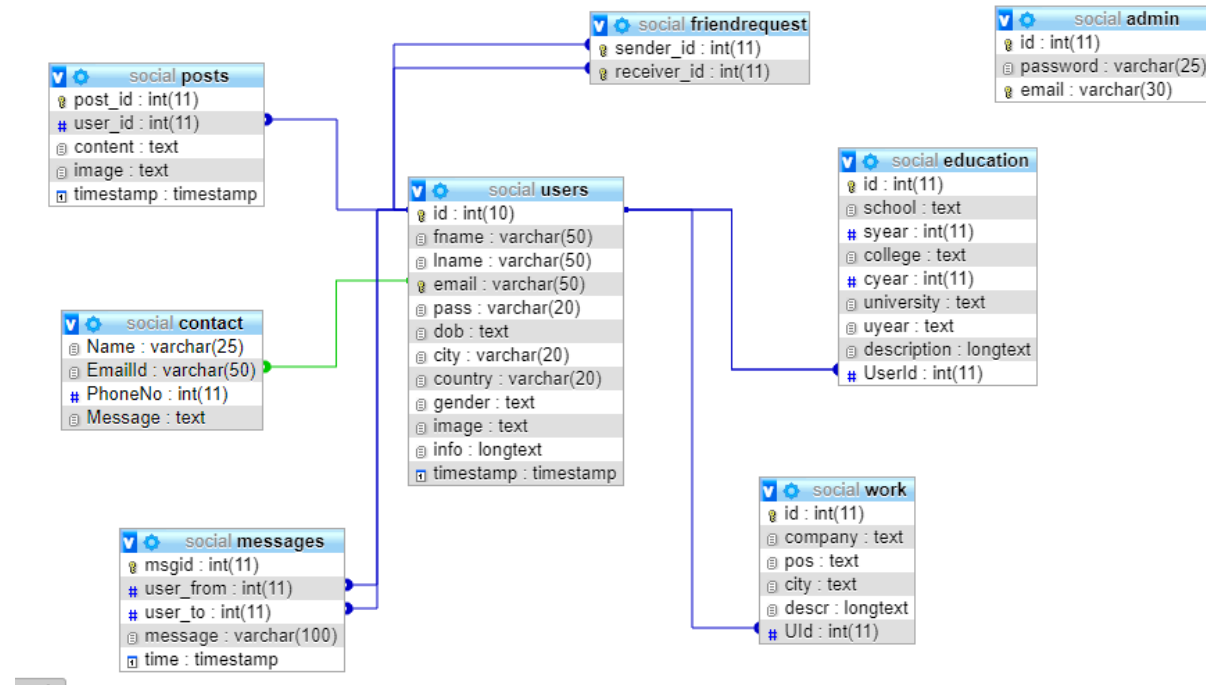
Not applicable

8. Detailed System Design



8.1. Database Design

8.1.1. ER Diagram



8.1.2. Data Dictionary

Work

#	Name	Type	Collation	Attributes	Null	Default	Extra
1	<u>id</u>	int(11)			No	None	AUTO_INCREMENT
2	company	text	latin1_swedish_ci		No	None	
3	pos	text	latin1_swedish_ci		No	None	
4	city	text	latin1_swedish_ci		No	None	
5	descr	longtext	latin1_swedish_ci		No	None	
6	UId	int(11)			No	None	

Message

	#	Name	Type	Collation	Attributes	Null	Default	Extra
<input type="checkbox"/>	1	msgid	int(11)			No	None	AUTO_INCREMENT
<input type="checkbox"/>	2	user_from	int(11)			No	None	
<input type="checkbox"/>	3	user_to	int(11)			No	None	
<input type="checkbox"/>	4	message	varchar(100)	latin1_swedish_ci		No	None	
<input type="checkbox"/>	5	time	timestamp		on update CURRENT_TIMESTAMP	No	CURRENT_TIMESTAMP	ON UPDATE CURRENT_TIMESTAMP

Contact

	#	Name	Type	Collation	Attributes	Null	Default	Extra
<input type="checkbox"/>	1	Name	varchar(25)	latin1_swedish_ci		No	None	
<input type="checkbox"/>	2	EmailId	varchar(35)	latin1_swedish_ci		No	None	
<input type="checkbox"/>	3	PhoneNo	int(11)			Yes	NULL	
<input type="checkbox"/>	4	Message	text	latin1_swedish_ci		No	None	

Users

	#	Name	Type	Collation	Attributes	Null	Default	Extra
<input type="checkbox"/>	1	id	int(10)			No	None	AUTO_INCREMENT
<input type="checkbox"/>	2	fname	varchar(50)	latin1_swedish_ci		No	None	
<input type="checkbox"/>	3	lname	varchar(50)	latin1_swedish_ci		No	None	
<input type="checkbox"/>	4	email	varchar(50)	latin1_swedish_ci		No	None	
<input type="checkbox"/>	5	pass	varchar(20)	latin1_swedish_ci		No	None	
<input type="checkbox"/>	6	dob	text	latin1_swedish_ci		No	None	
<input type="checkbox"/>	7	city	varchar(20)	latin1_swedish_ci		No	None	
<input type="checkbox"/>	8	country	varchar(20)	latin1_swedish_ci		No	None	
<input type="checkbox"/>	9	gender	char(1)	latin1_swedish_ci		No	None	
<input type="checkbox"/>	10	image	text	latin1_swedish_ci		No	None	
<input type="checkbox"/>	11	info	longtext	latin1_swedish_ci		No	None	
<input type="checkbox"/>	12	timestamp	timestamp			No	CURRENT_TIMESTAMP	

Posts

#	Name	Type	Collation	Attributes	Null	Default	Extra
<input type="checkbox"/> 1	<u>post_id</u>	int(11)			No	None	AUTO_INCREMENT
<input type="checkbox"/> 2	<u>user_id</u>	int(11)			No	None	
<input type="checkbox"/> 3	<u>content</u>	varchar(10000)	latin1_swedish_ci		No	None	
<input type="checkbox"/> 4	<u>image</u>	text	latin1_swedish_ci		No	None	
<input type="checkbox"/> 5	<u>timestamp</u>	timestamp		on update CURRENT_TIMESTAMP	No	CURRENT_TIMESTAMP	ON UPDATE CURRENT_TIMESTAMP

Admin

#	Name	Type	Collation	Attributes	Null	Default	Extra
<input type="checkbox"/> 1	<u>id</u>	int(11)			No	None	
<input type="checkbox"/> 2	<u>password</u>	varchar(25)	latin1_swedish_ci		No	None	
<input type="checkbox"/> 3	<u>email</u>	varchar(30)	latin1_swedish_ci		No	None	

FriendRequest

#	Name	Type	Collation	Attributes	Null	Default	Extra
<input type="checkbox"/> 1	<u>sender_id</u>	int(11)			No	0	
<input type="checkbox"/> 2	<u>receiver_id</u>	int(11)			No	0	

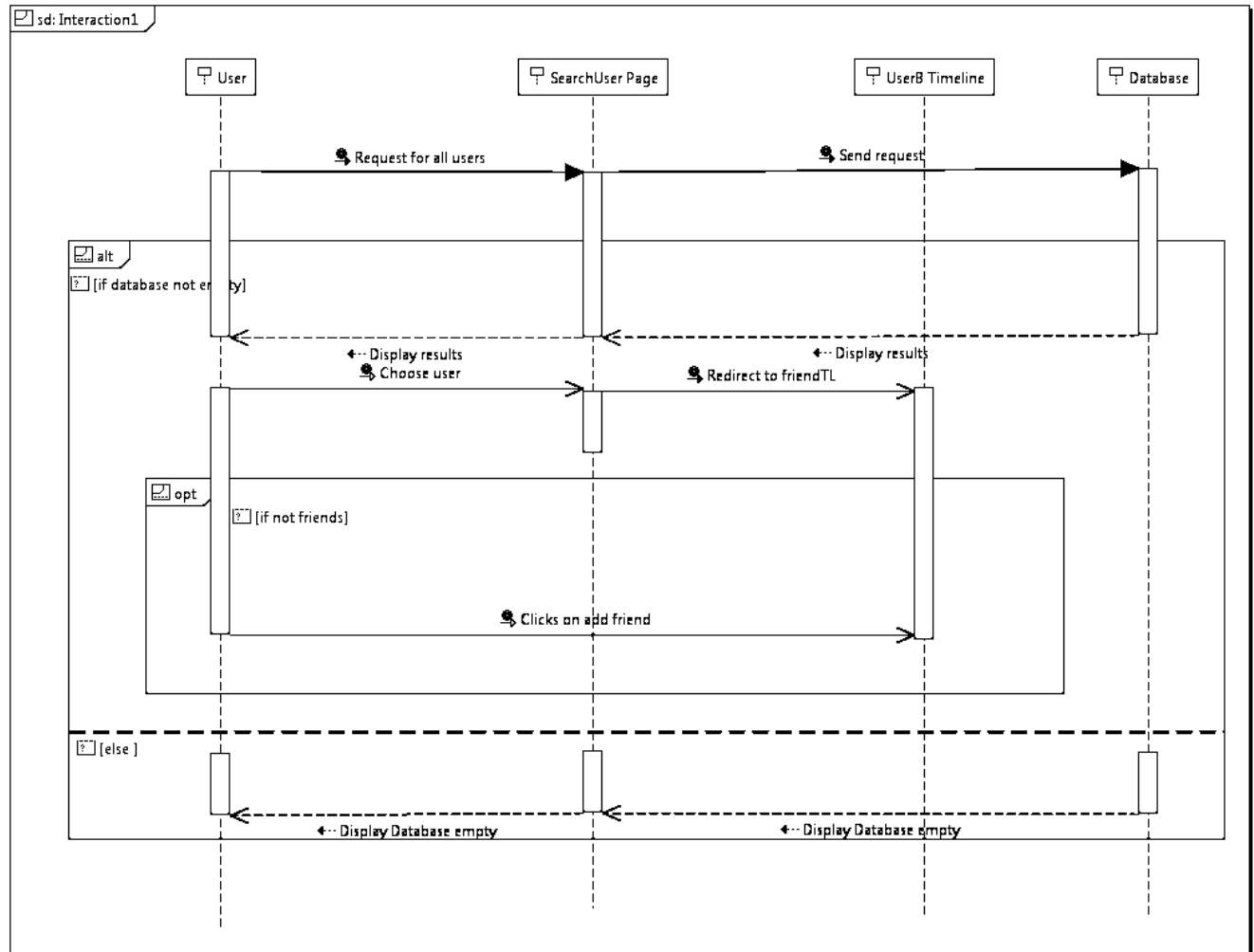
Education

#	Name	Type	Collation	Attributes	Null	Default	Extra
<input type="checkbox"/> 1	<u>id</u>	int(11)			No	None	AUTO_INCREMENT
<input type="checkbox"/> 2	<u>school</u>	text	latin1_swedish_ci		No	None	
<input type="checkbox"/> 3	<u>syear</u>	int(11)			No	None	
<input type="checkbox"/> 4	<u>college</u>	text	latin1_swedish_ci		No	None	
<input type="checkbox"/> 5	<u>cyear</u>	int(11)			No	None	
<input type="checkbox"/> 6	<u>university</u>	text	latin1_swedish_ci		No	None	
<input type="checkbox"/> 7	<u>uyear</u>	text	latin1_swedish_ci		No	None	
<input type="checkbox"/> 8	<u>description</u>	longtext	latin1_swedish_ci		No	None	
<input type="checkbox"/> 9	<u>UserId</u>	int(11)			No	None	

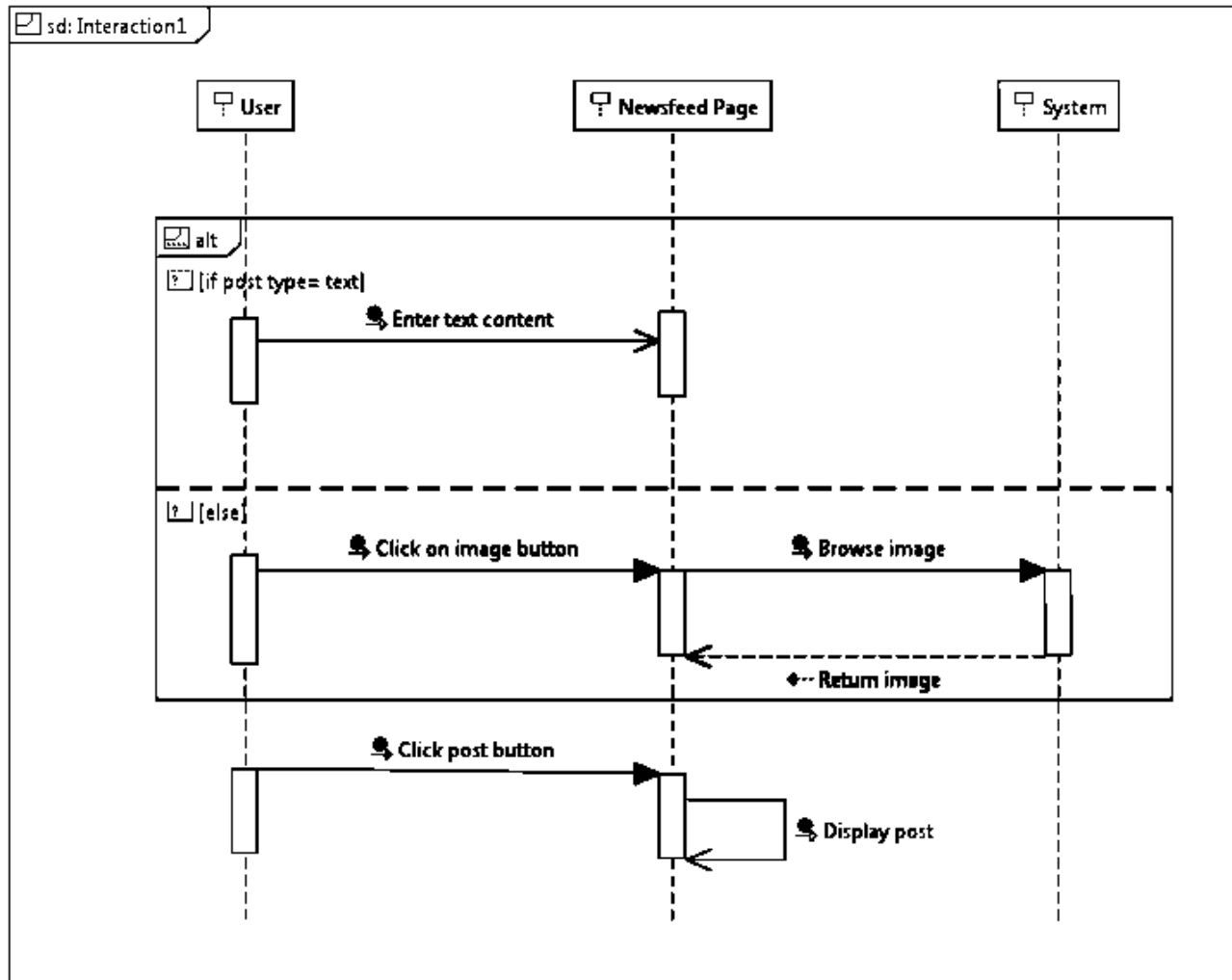
9. Application Design

9.1.2. Sequence Diagram

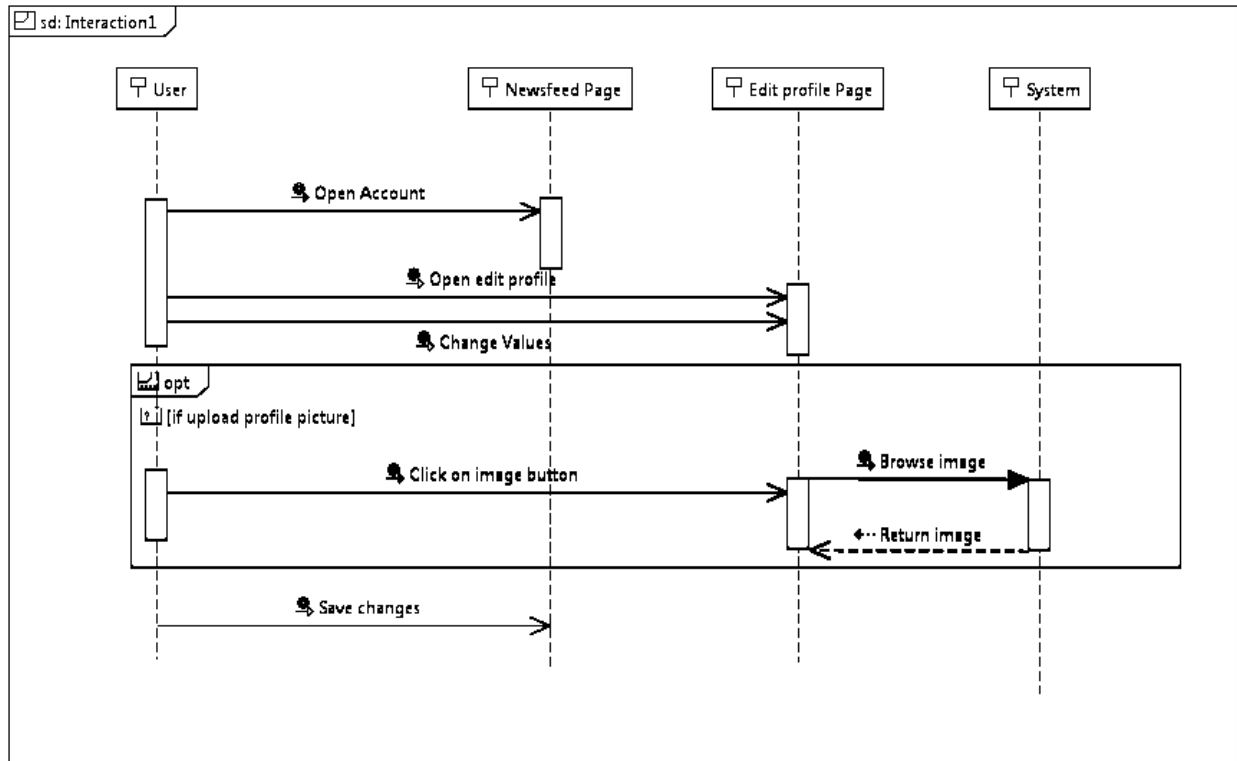
9.1.2.1 Add Friend / Follow



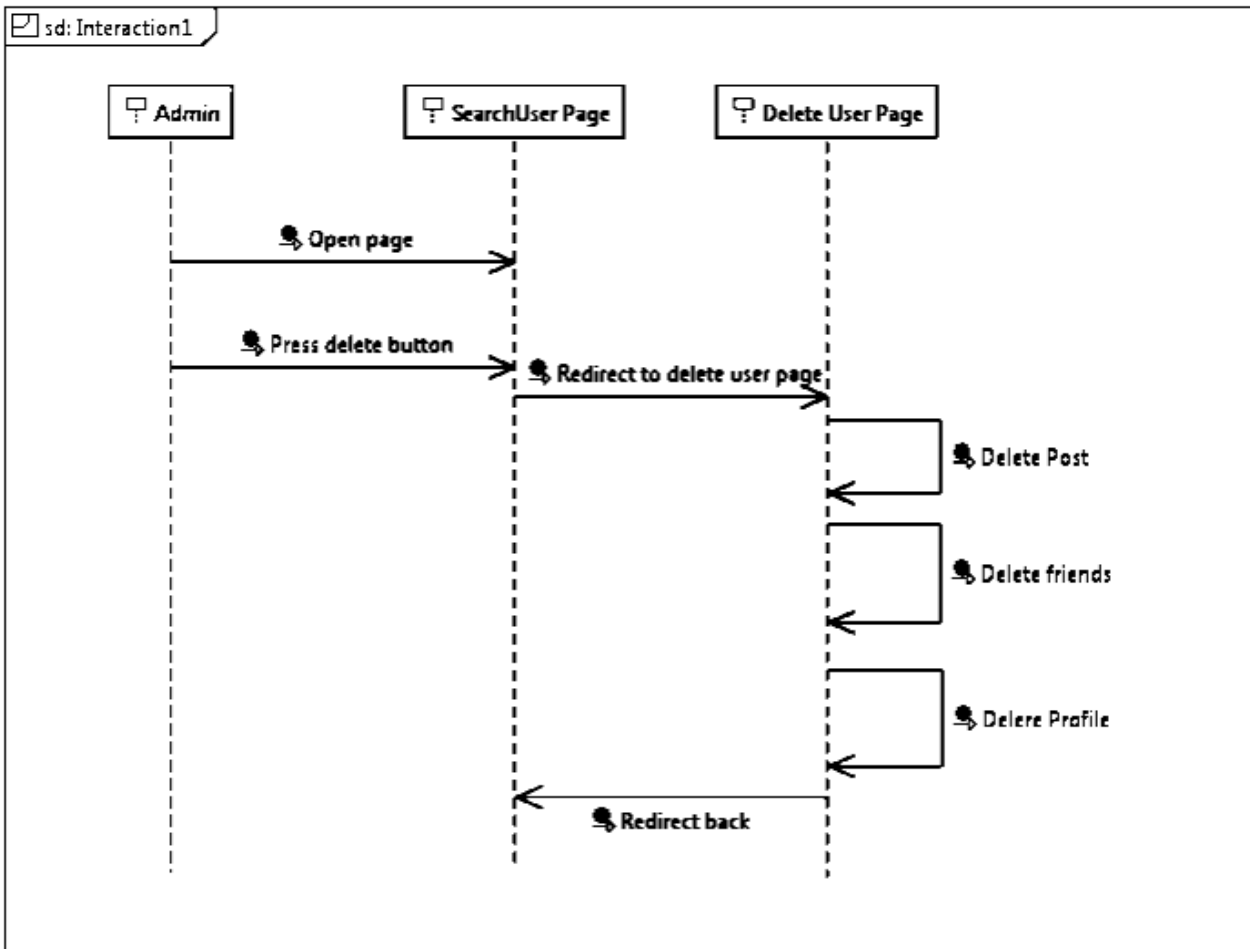
9.1.2.2 Make Post



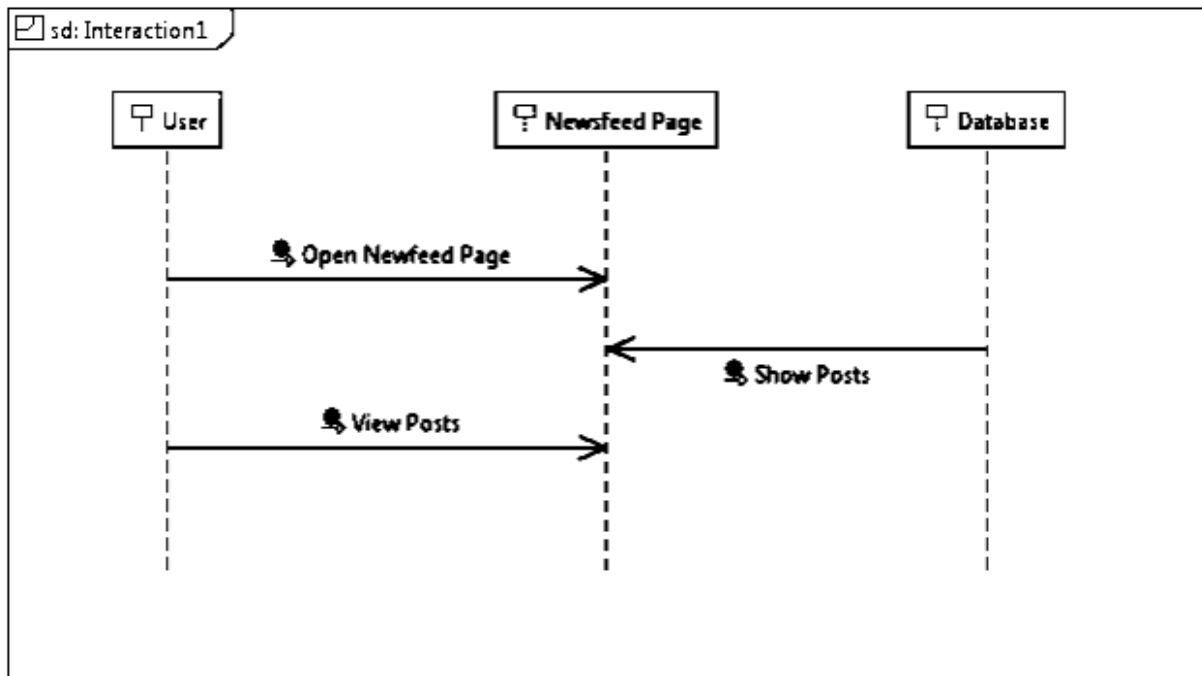
9.1.2.3 Edit Profile



9.1.2.4 Admin Access (Panel)

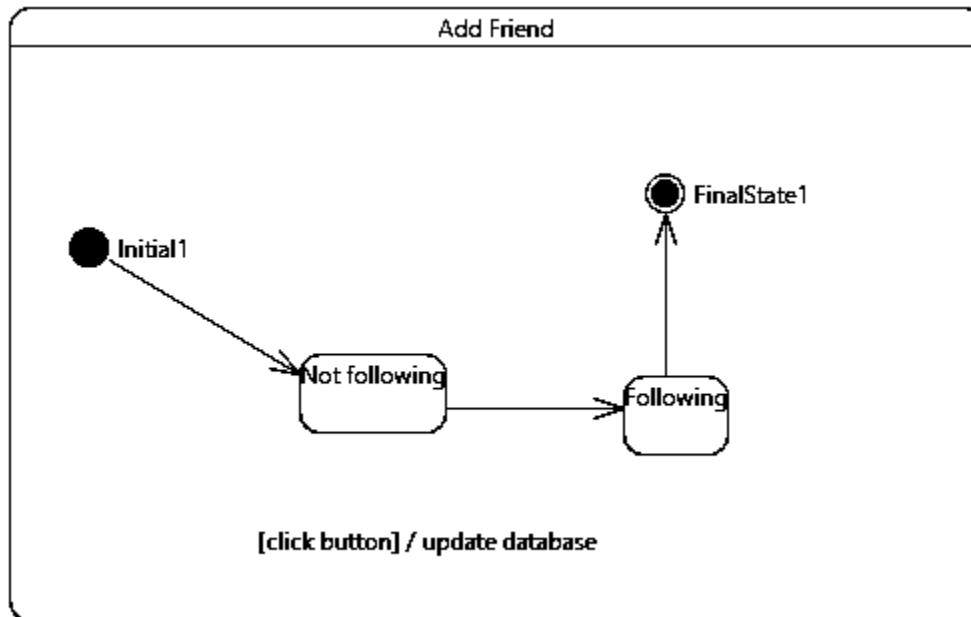


9.1.2.5 Browse Newsfeed

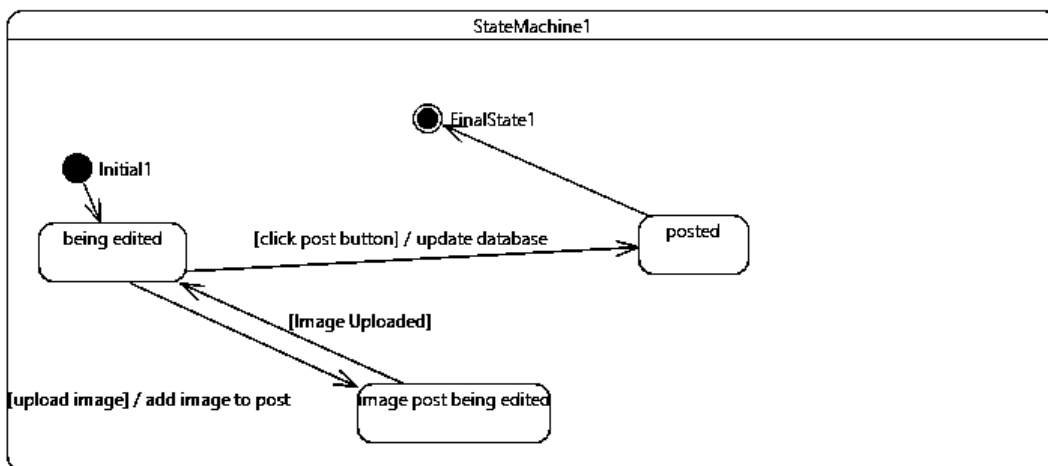


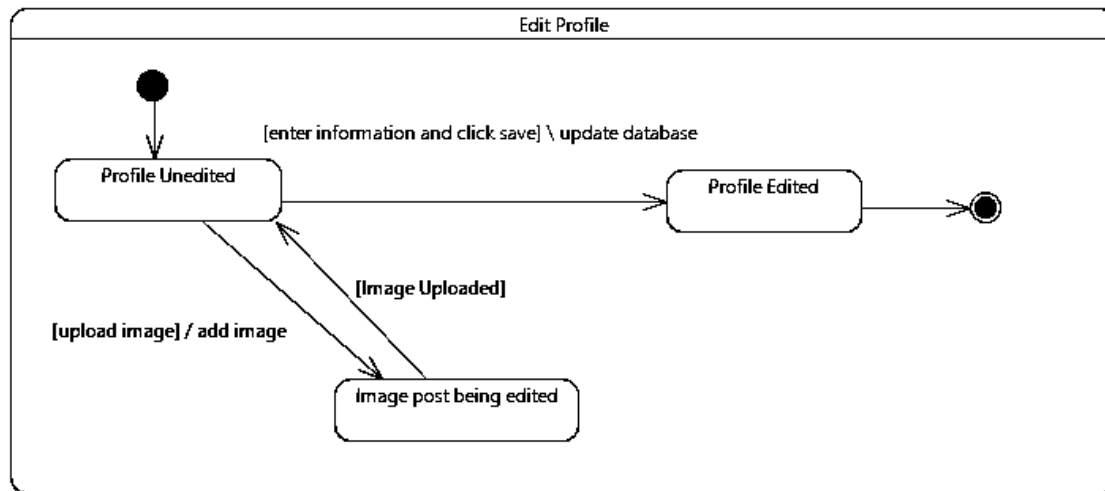
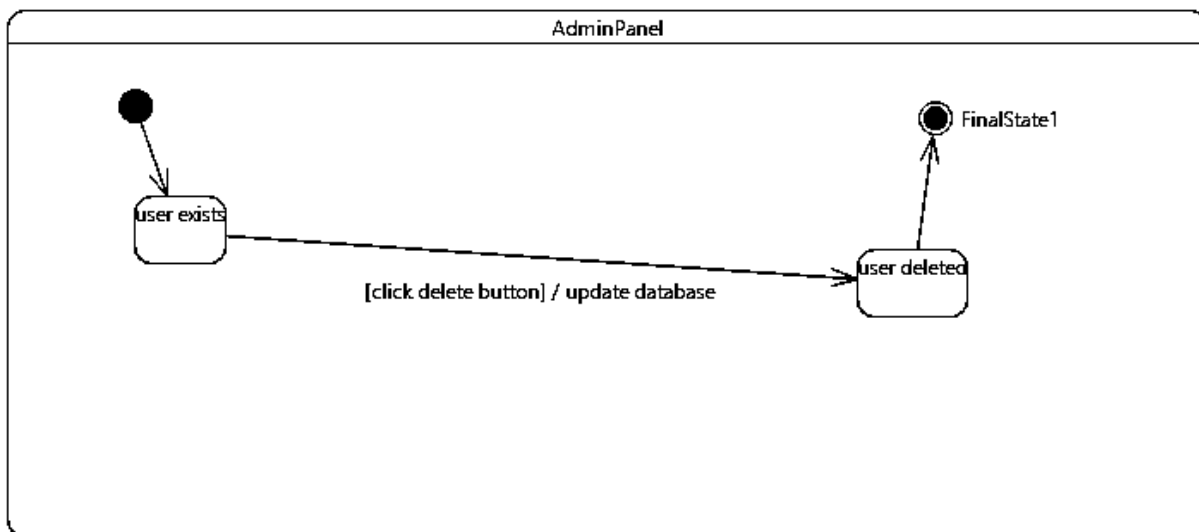
9.1.3. State Diagram

9.1.3.1

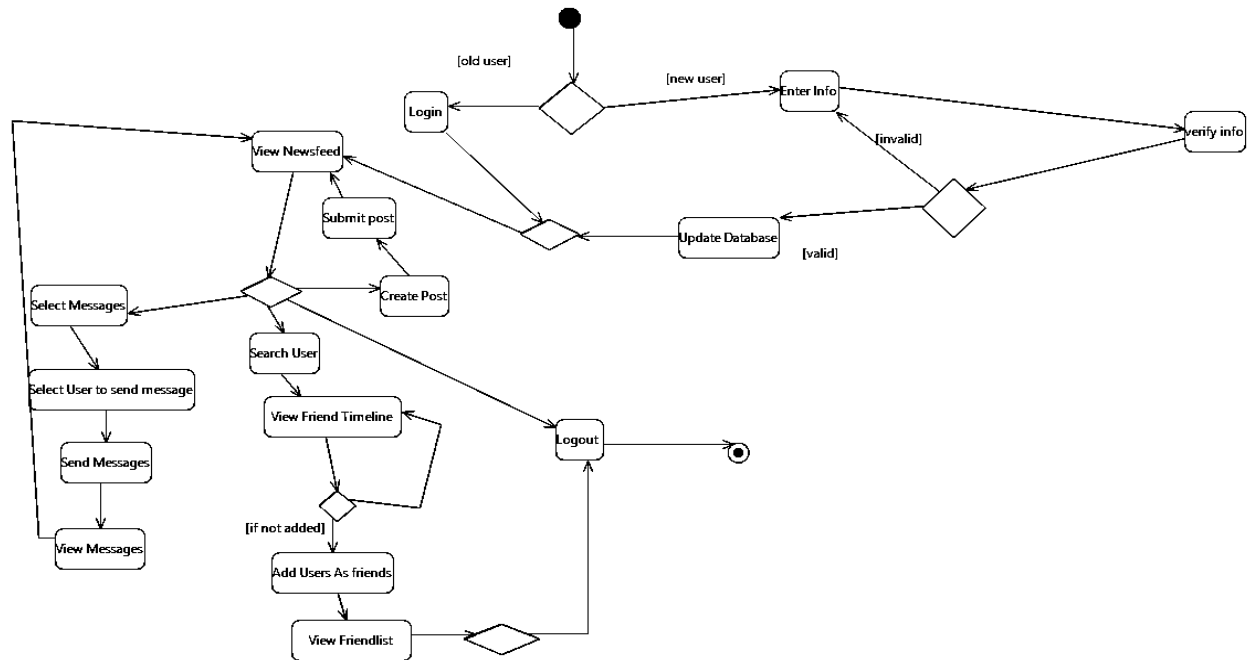


9.1.3.2



9.1.3.3**9.1.3.4**

9.1.4. Activity Diagram



10. References

Not Applicable

11. Appendices

Not Applicable